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(21) International Application Number: <b>PCT/US99/23275</b> (22) International Filing Date: <b>6 October 1999 (06.10.99)</b> (30) Priority Data: <b>60/103,462 7 October 1998 (07.10.98) US</b> <i>07 Apr 01/30 mon</i> (71) Applicant (for all designated States except US): <b>STOVER &amp; ASSOCIATES, INC. [US/US]; 5302 W. 6th Street, Stillwater, OK 74075 (US).</b> (72) Inventors; and (75) Inventors/Applicants (for US only): <b>ZHAO, Qin [CN/US]; Apartment 810, 1515 Rio Grande Drive, Plano, TX 75075 (US). WILSON, Gerald, E. [US/US]; 3211 West 32nd Street, Stillwater, OK 74074 (US). CAMPANA, Christopher, K. [US/US]; 61 Kosten Bader Rd., Rd., Box 61, Hope, NJ 07844 (US). STOVER, Enos, L. [US/US]; Rt. 4 Box 666, Stillwater, OK 74074 (US).</b> (74) Agents: <b>McCARTHY, Bill, D. et al.; Crowe &amp; Dunlevy, P.C., 1800 Mid-America Tower, Oklahoma City, OK 73102 (US).</b>		(81) Designated States: <b>AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</b>  <b>Published</b> <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>

(54) Title: **COMPUTER ASSISTED IDENTIFICATION OF FILAMENTOUS BACTERIA**

## (57) Abstract

Method and apparatus for identifying a filamentous organism of the type present in a biological waste water treatment process. A magnified image of an unstained filamentous organism is obtained (122, 124), and initially evaluated for the presence or absence of attached growth and the presence or absence of sulfur granules (142). A computer routine (140) resident in a computer workstation (104) is executed which, for each combination of the presence or absence of attached growth and the presence or absence of sulfur granules, provides a separate user interactive search tree (144, 146, 148, 150), each search tree leading to a different set of possible types of filamentous organism.